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A profile of a high school is presented in which the building design features provided versatile interior space and provisions for future expansion. In briefly describing the educational bases of the building design, two items are emphasized--(1) why the school was designed as it was, and (2) how it was designed and built. Schematics and photographs are included along with an evaluation of the school in relation to the program for which it was planned. (FS)

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A & M CONSOLIDATED SENIOR HIGH SCHOOL
COLLEGE STATION, TEXAS

EF 003545

PROFILES OF SIGNIFICANT SCHOOLS

Profiles of Significant Schools

A & M CONSOLIDATED SENIOR HIGH SCHOOL COLLEGE STATION, TEXAS

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Profiles of Significant Schools

General Introduction

This is one of a series of "Profiles of Significant Schools." The series is designed to acquaint school administrators and members of boards of education with some of the latest developments in school planning and design. What makes a school significant? It may be an unusual solution to housing the school's educational program which is itself unusual. It may be an architectural solution of great promise. Or it may be an illustration of one point of view on an architectural issue, e.g. air conditioning, portability, subdivisibility.

Since a school cannot be fully understood apart from the program it houses, these profiles will generally describe briefly the educational bases of the design of the buildings. The profiles will attempt to show two things: first, why the school was designed as it was; and second, how it was designed and built. If possible, an evaluation of the school in relation to the program for which it was planned will be included.

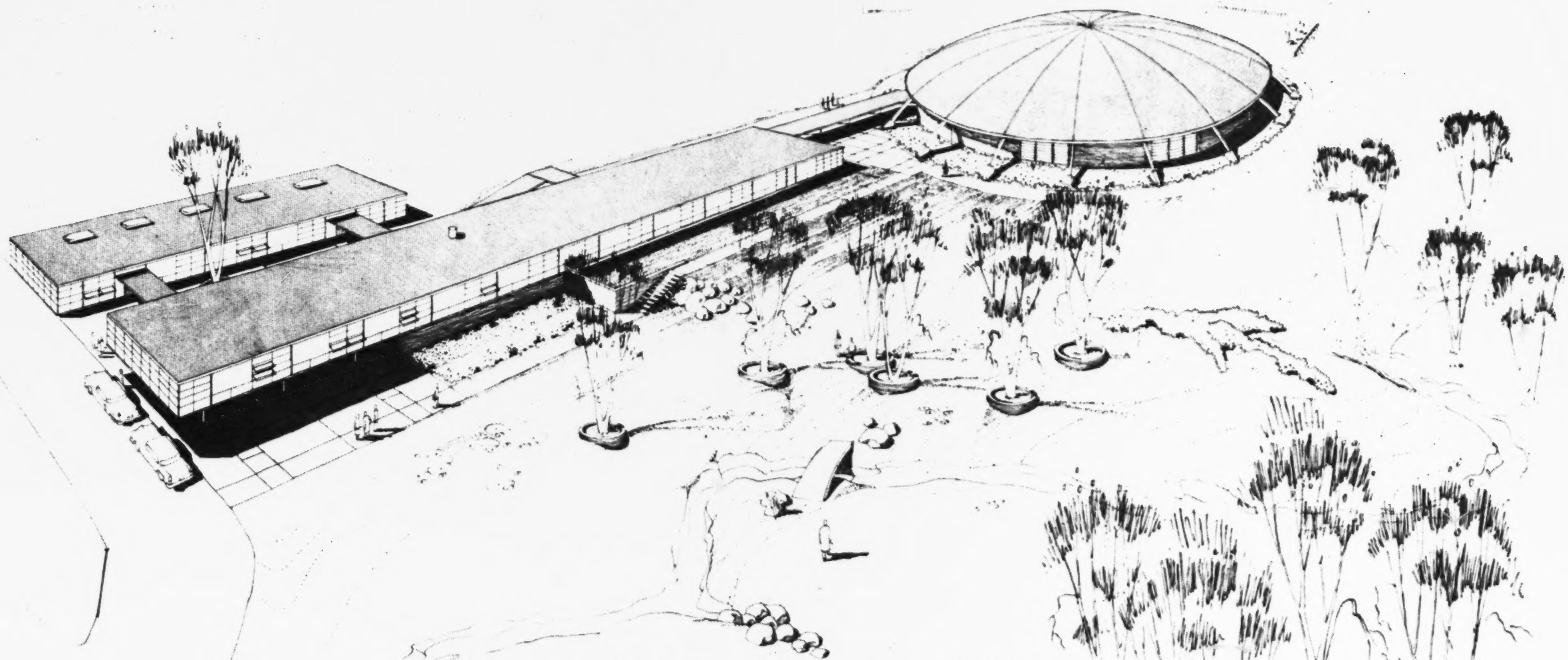
These are profiles of individual schools, built in individual communities, to house individual programs. They may not serve ideally in other settings for other programs. However, they represent - in EFL's eyes - significant approaches to schoolhousing. We hope they will stimulate new and better schools.

The series of profiles is itself an experiment and we would appreciate your reactions to it as well as suggestions for making future profiles more useful.

In the majority of cases the story of a significant school ends on a note of triumph. Not so with this one. In the beginning, there was the promise of imagination and sensitive design. At the end, the unexpectedly high cost, though modest by national standards, seemed to the community to be beyond its grasp.

Yet we believe that this school, however altered by the exigencies of the public fisc, is nevertheless significant.

School:	A & M Consolidated Senior High School College Station, Texas
Capacity:	Designed for 210
Enrollment:	Now 350
Architects:	Caudill, Rowlett & Scott Texas, Oklahoma, Connecticut
Superintendent:	L. S. Richardson, Jr., when school was planned W. T. Riedel, present superintendent
Principal:	E. P. Ozment
Place:	College Station, Texas, is 90 miles north of Houston and has a population of about 8,000. The economic life of the town centers around Texas Agricultural & Mechanical College.



A&M Consolidated Senior High School -- College Station, Texas

The A & M Consolidated Senior High School in College Station, Texas, completed in 1955, was one of the first high schools in the country designed specifically to meet change through the creation of a building which is essentially a shell enclosing free, adaptable interior space.

College Station operates a conventional school system. There has been no sweeping reorganization of the program, no introduction of varying class sizes, no team teaching. The only changes have been those demanded by the growth of the school population, and the corresponding growth in the complexity of the school program. Even so, College Station has had its problems with school buildings.

The town built a high school in 1951 that was carefully planned around the program of that day. Each room was designed for a specific function. The rooms were collected and rigidly walled together into a building. According to L. S. Richardson, Jr., the superintendent at that time, it was assumed that the school would admirably suit the town's needs for many years.

But change was not kind to this school. The number of students increased and the program was broadened. With great difficulty the building was modified to accommodate these changes. The library became an art room. A science room turned into a social studies room. A study hall was subdivided into classrooms. In four years the arrangement of the school bore little resemblance to the original plan.

In 1953, the old high school could no longer contain the students or accommodate the program. Faced with the necessity for extensive expansion and remodeling of the old building if it were to remain a high school, the School Board decided it would be wiser to turn the old school into a junior high and build a new senior high school.

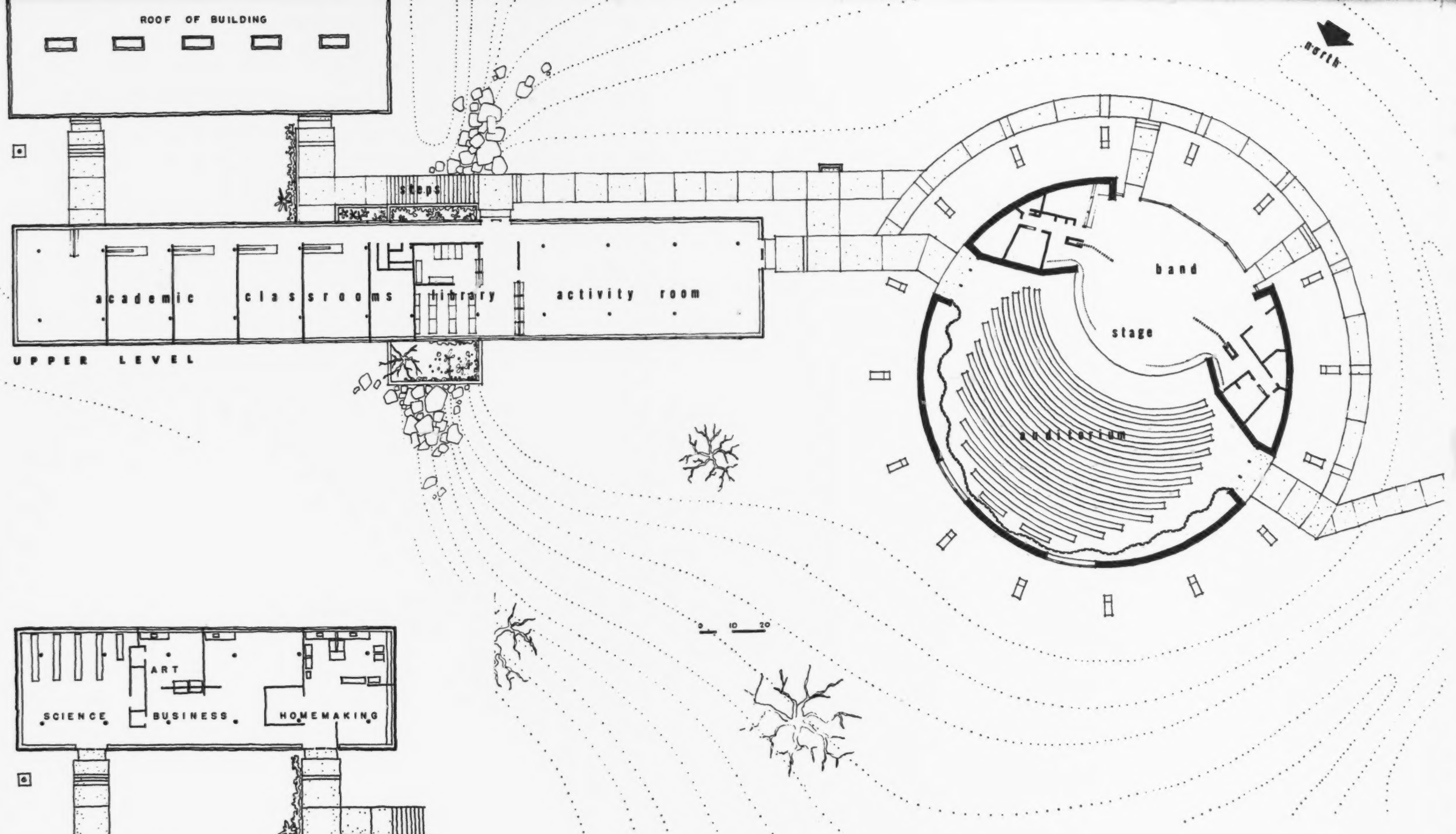
The educators and architects wanted a building which would always be prepared for change, a school which would not become obsolete in four years. The planners were seeking versatile interior space - space which could be rearranged swiftly, easily, and economically and used for different kinds of educational activity as the need arose. They also wanted the school to be

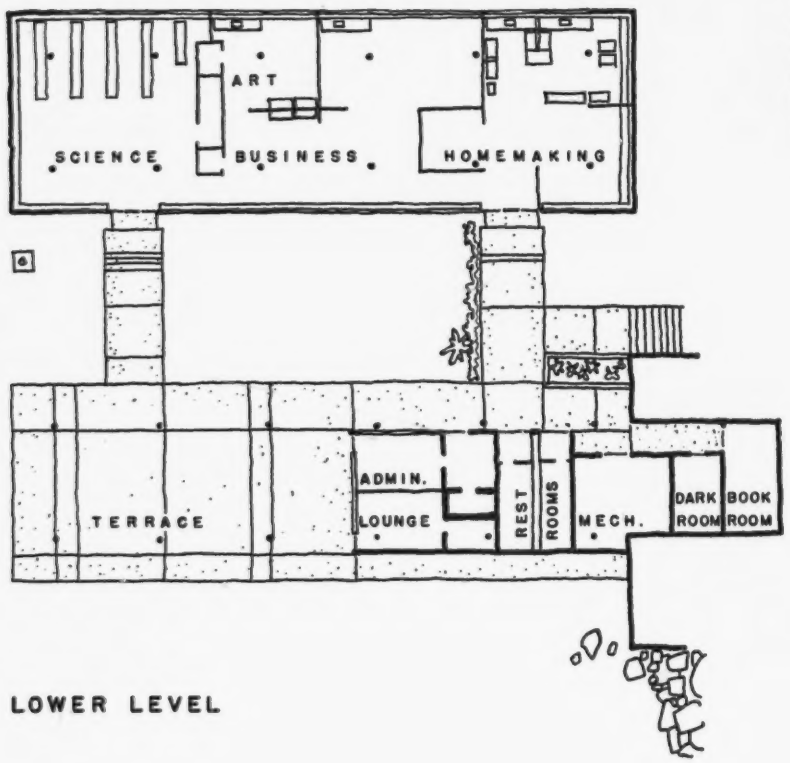
expandable, so that new space could be added without disturbing the structure of the existing building and without costly remodeling of its interior.

The Versatile School

The architects and educators thought that the best way to obtain versatile space was to make the interior of the building as impermanent as possible.

The new A & M Consolidated Senior High School consists of three separate buildings grouped on two levels. Administrative offices and mechanical facilities are located on the lower floor of the two-story classroom building. The lab building is to the left and the circular auditorium building to the right.



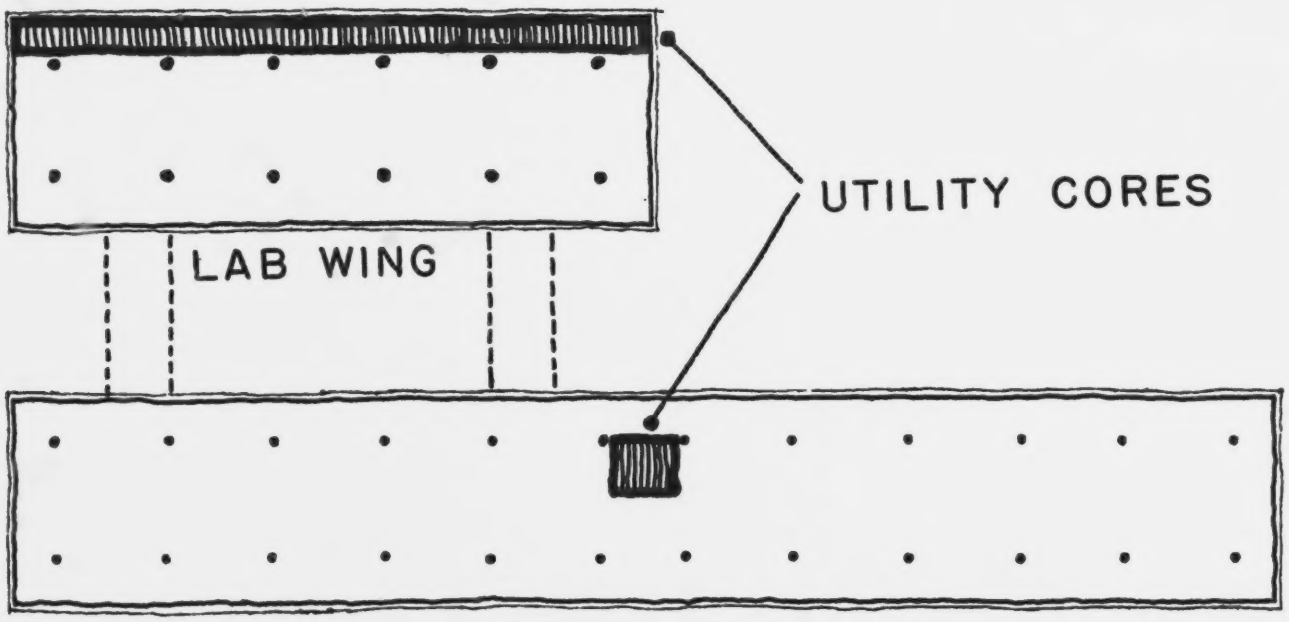


LOWER LEVEL

The school is built on two levels. The lower drawing shows the spaces under the academic classrooms and the labs.

Essentially, the interiors of the lab and classroom buildings are empty spaces. The only fixed interior walls are those in the administration and service areas on the lower floor of the classroom building (see diagram, page 3).

The steel beam - wood joist roof of each building is cantilevered from steel columns set at regular intervals inside the building. Exterior wall panels of glass and asbestos cement board are glazed into an aluminum frame to form the exterior walls.

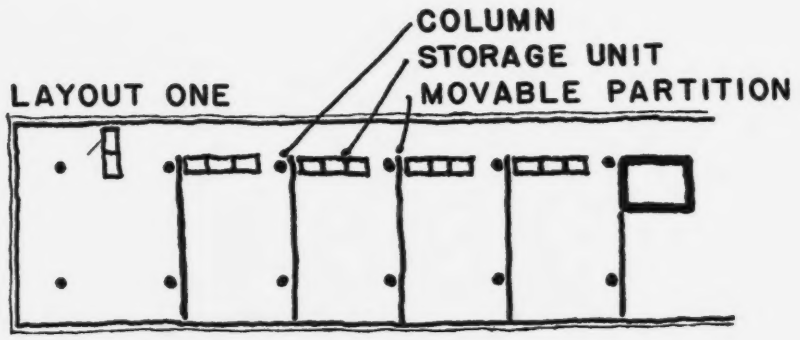


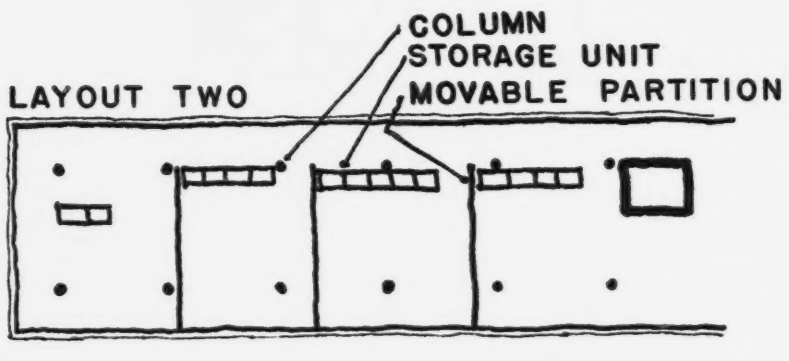
Plumbing pipes are placed against the outside wall in the lab building and grouped in a core in the center of the classroom building. Electrical wiring and ventilating facilities are in the ceilings. Heat is distributed by a system of finned convectors set in cabinets at the perimeters of the buildings.

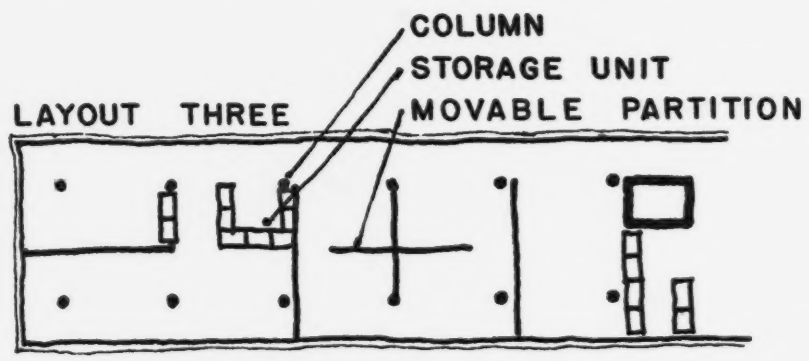
In place of permanent walls with doors, the space in these buildings is divided into classrooms by two kinds of space dividers- a set of 4' x 8' hollow core wood panels covered with chalkboard, corkboard, plywood, or combinations of these materials, and a set of movable storage cabinet units which serve as student lockers, classroom shelves, and instructional storage space.

The storage units can be moved at any time; the panels can be moved but not quite so easily. Before the school year begins, the administrators and teachers can work out how they want the spaces arranged for the coming year - how much space each part of the program will need and how the students will be arranged within that space. The wood panels can then be set up to conform with these decisions. If necessary, the panels could be moved overnight.

By using both kinds of space dividers, the classroom area can be arranged to handle any program the school might want.





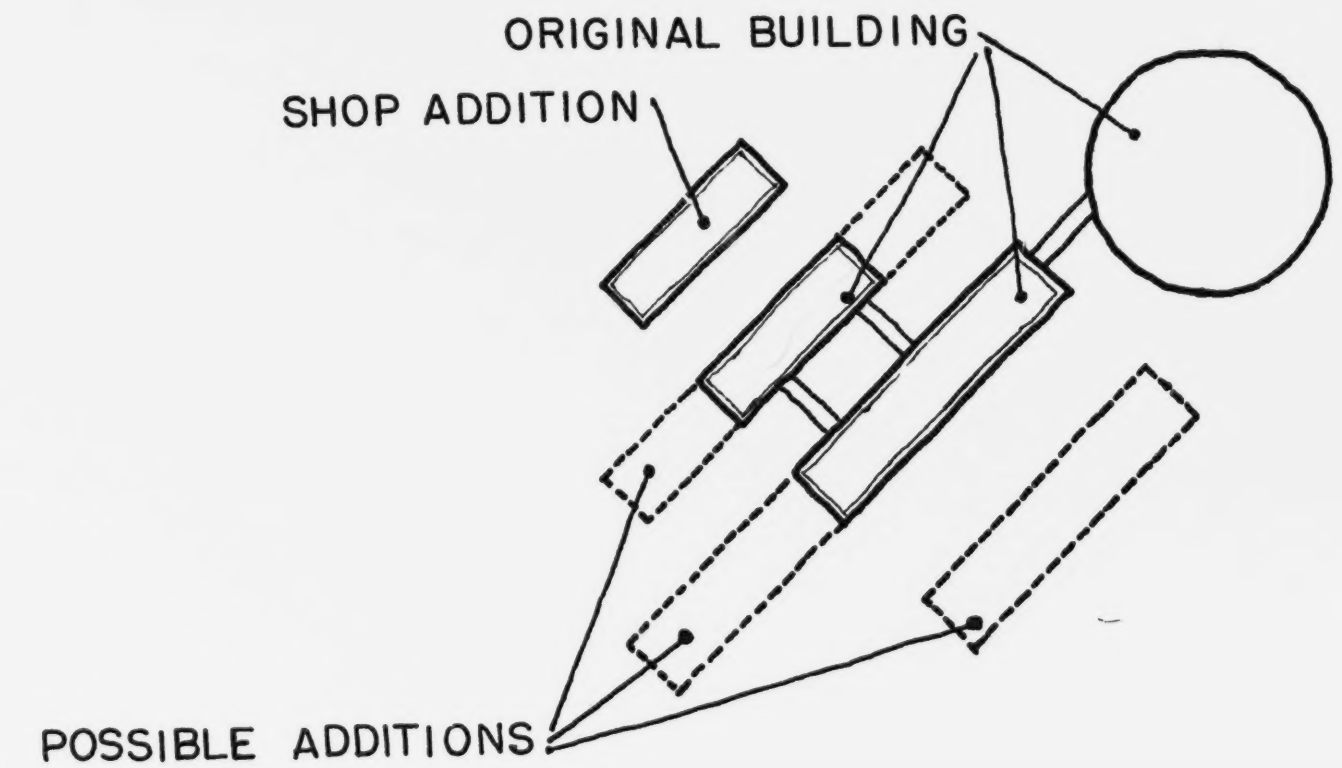


The activity room (see page 7) is used as a reading room for the library, as individual study space, or as a room for student meetings, dances, or extra-curricular activities. With partitions, it serves as additional classroom space.

The use of this kind of open planning raises the question of noise. All those connected with the school agree that the noise level is too high even with the acoustical tile ceiling. Sound is transmitted from classroom to classroom. Some distraction is caused also by students passing through the corridor spaces. But almost everyone claims that the noise level is not much greater than in the average Texas school where the doors are left open much of the time for ventilation. The architects and educators say that the convenience of the open planning is worth the higher noise level.

The Expandable School

The same system of free interior space has produced a building which can be easily expanded. To add space, an end wall is removed, and the building is extended by additional footage. Except for removing the end wall, there is no structural alteration of the older portion of the building. Partitions are moved, removed, or added to arrange space to suit new demands.



The ability to expand A & M Consolidated Senior High School easily and economically was particularly important to College Station because the town did not have the money in 1954 to build a school large enough to meet its projected needs. The school as completed in 1955 was designed for only 210. The enrollment has now grown to 350, but only one small shop wing has been added to date. There is still no new gymnasium - students use the gym attached to the nearby junior high school.

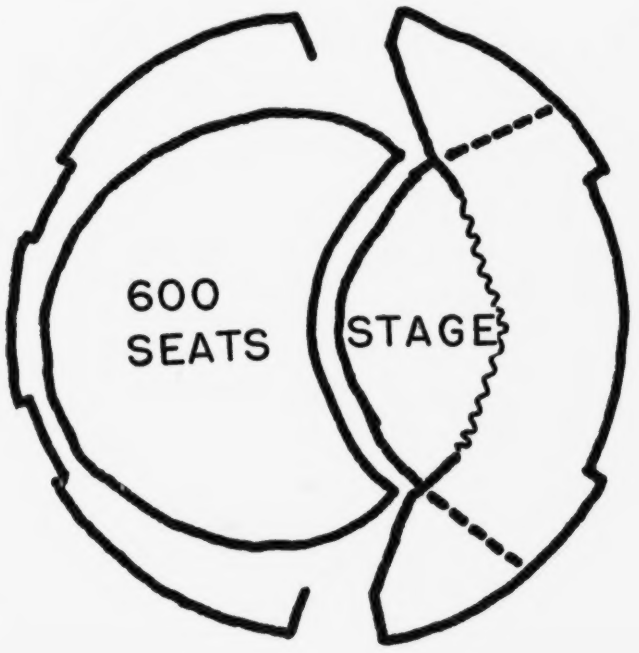
The Auditorium

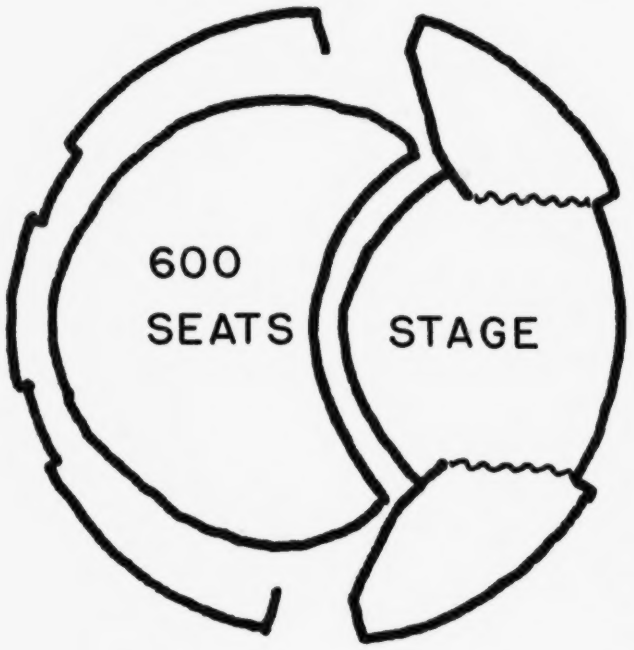
While the auditorium does not lend itself to expansion, it is an economical and useful structure.

The circular design yields the largest amount of interior space for the least amount of building. It is constructed of identical laminated arches set on concrete footings and meeting top center to form a dome. The wood deck, supported by wood beams (purlins) set between the diametrical arches, is roofed with red asphalt.

Most important, the circular design makes possible a building which serves many purposes. The space within the dome is divided into two main parts - a permanent section seating 600 and an area adaptable to different functions. The adaptable area can be arranged, by means of a folding partition and the moving of drapes, in three ways:

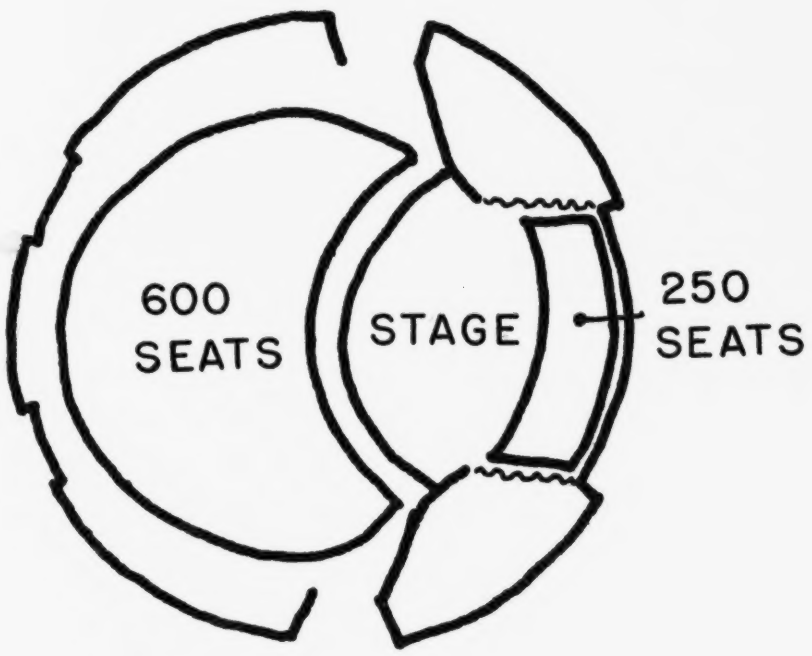
Small stage for lectures, forums, discussions, dramatics, and chamber music. The room behind the stage is used for band rehearsals.





Large stage for musical festivals, dancing, band and orchestra concerts.

Special arrangement for theater-in-the-round, school assemblies, and commencements. With this arrangement an audience of 850 can be seated.



The auditorium arranged for a large concert, a meeting, or theater-in-the-round.

Cost

The school contains 26,249 square feet (covered but unenclosed areas counted at one-half) and cost $293,200. The cost per square foot was $11.17 and the cost per pupil, at the designed capacity of 210, was $1,396.

In 1954, when the contracts were put out to bid, the lowest bids were about $100,000 above what the town had been planning to spend. The bid price was reduced $100,000 by lowering the quality of construction and leaving out some basic equipment.

A cheaper and less satisfactory movable partition than the one originally specified was used to divide classrooms. A lower grade of window was used and asbestos cement panels were substituted for marble panels. A more nearly soundproof partition for the stage of the auditorium was replaced by a folding door that made it impossible to use the auditorium and the band rehearsal room at the same time. Ceiling baffles designed to improve acoustics in the auditorium were eliminated. An air conditioning system for the auditorium - planned so it could be used year round and thus serve as a community center - was also left out.

Since the school was built, its enrollment has grown from 210 to 350 students. The increased student load has been accommodated by using the school's flexibility to cut down the size of the classrooms, thereby creating more rooms into which the extra students are put. The space intended for the activity room has been subdivided into classrooms. Aside from a small shop building southeast of the lab building, the school has not been expanded.

The building has not been put to its best use, but this does not affect the quality or significance of the basic design. The concept developed here - flexibility through open planning - has been adopted and appears to be working successfully in other schools.

Cost Breakdown

Performance bond	$	2,880.00
General conditions		4,590.00
Site preparation & excavation		3,200.00
Concrete		61,850.00
Structural steel		15,800.00
Waterproofing & dampproofing		2,400.00
Masonry		14,200.00
Miscellaneous metal		7,400.00
Roofing & sheet metal		16,000.00
Plastic skylights		900.00
Hollow metal frames		2,600.00
Windows		12,200.00
¼" Asbestos cement board glazed		3,800.00
Glass & glazing		6,000.00
Carpentry & convector cabinets		38,000.00
Millwork & partitions		17,108.61
"Modernfold" door		2,600.00
Asphalt tile		2,400.00
Finish hardware		4,000.00
Stage equipment		1,800.00
Auditorium seats		4,200.00
Electrical & mechanical		69,271.39
Total	$	293,200.00

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